

REMARKS

This is intended as a full and complete response to the Office Action dated August 5, 2005, having a shortened statutory period for response extended one month and set to expire on December 5, 2005. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-24 remain pending in the application and are shown above. Claims 1-24 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

I. REJECTION OF CLAIMS 1-24 UNDER 35 U.S.C. §103(a).

Claims 1-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Flanner et al* (U.S. Patent 6,410,437) in view of *Gabriel et al* (U.S. Patent No. 6,599,839). Applicants respectfully traverse the rejection.

Applicants have attached a **Declaration Under 35 C.F.R. §1.131** that shows invention of the relevant subject matter in independent claims 1 and 21 by Applicants prior to February 2, 2001, the filing date of *Gabriel et al*. Therefore, the submitted declaration is sufficient to remove *Gabriel et al*. and thus overcome the rejection of claims 1-24. Allowance of claims 1-24 is respectfully requested.

Furthermore, the combination of *Flanner et al* in view of *Gabriel et al* does not teach, show or suggest all of the claim limitations.

The Examiner states that *Flanner et al*. does not explicitly teach that the second organosilicate layer is etched with a gas mixture comprising a hydrogen containing fluorocarbon and one or more gases selected from the group consisting of hydrogen (H₂), nitrogen (N₂), oxygen (O₂), argon (Ar), and Helium (He). The Examiner states that *Gabriel et al*. teaches that typical etchants for an organosilicate glass layer include a hydrogen containing fluorocarbon and one or more gasses selected from the group consisting of argon (Ar) and oxygen (O₂). The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of *Flanner et al*. and *Gabriel et al*. to enable the process of etching the second organosilicate layer using a gas mixture comprising a hydrogen-containing fluorocarbon

and one or more gases selected from the group consisting of Argon (Ar) and Oxygen (O₂) of *Flanner et al.*

Flanner et al. discloses a two step etching process for first etching through a trench dielectric, a trench stop layer, and almost completely through a via dielectric with a low selectivity etchant, and then etching the remainder of the via dielectric with a high selectivity etchant. The low selectivity etchant comprises argon, nitrogen, a hydrogen-free fluorocarbon, and optionally, oxygen. The high selectivity etchants comprise argon, nitrogen, and a hydrogen-free fluorocarbon. Col. 5: 51-67; Col. 6: 1-15. *Flanner et al.* also discloses etching barrier layer 14 using an etchant of argon, trifluoromethane, and tetrafluoromethane. Col. 6: 60-65.

Gabriel et al. discloses etching a multi-layer dielectric material by continuously increasing or decreasing the concentration of the reactive agent in the etchant. Col. 6: 15-18.

Flanner et al. and *Gabriel et al.* either alone or in combination, do not teach, show, or suggest forming a silicon oxide layer, forming an organosilicate layer on the silicon oxide layer, and etching the second organosilicate layer to define vias therein, wherein the second organosilicate layer is etched with a hydrogen containing fluorocarbon gas mixture, as recited in independent claim 1 and claims 2-20 dependent thereon.

Furthermore, *Flanner et al.* and *Gabriel et al.* either alone or in combination, do not teach, show, or suggest forming a silicon oxide layer, forming an organosilicate layer on the silicon oxide layer, etching the second organosilicate layer to define vias therein, wherein the second organosilicate layer is etched with a hydrogen containing fluorocarbon gas mixture, and etching the silicon oxide layer to transfer the vias defined in the second organosilicate layer therethrough, wherein the silicon oxide layer is etched with a mixture comprising a fluorocarbon gas as recited in independent claim 21 and claims 22-24 dependent thereon. Therefore, withdrawal of the rejection is respectfully requested.

II. CONCLUSION.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, Applicants believe that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicants respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



Keith M. Tackett
Registration No. 32,008
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)